



P/35-6 CIP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Krysiak et al.

Serial No.: 09/544,878

Group Art Unit: 3643

Filed: April 7, 2000

Examiner: Valenti, A.

For: SEEDING TREATMENTS

Box Response
Assistant Commissioner for Patents
Washington, D.C. 20231

DECLARATION OF LEE D. HOFFMANN

I, Lee Hoffman declare as follows:

1. I have 26 years of experience in the field of agglomeration with Feeco International.
2. I have reviewed the application of the present invention.
3. I have reviewed the Kitamura patent, 4,250,660 and The Center for Professional Advancement, Briquetting, Pelletizing, Extrusion and Fluid Bed/Spray granulation by Engelleitner.
4. In the world of agglomeration (particle size enlargement), there are four distinctively different types of processes: agitation, pressure, liquid and thermal.
5. The process of the present invention is classified as agitation, while the process disclosed and taught by Kitamura requires liquid agglomeration. This can be more clearly understood when the methods and equipment used to produce such products are explained below.
6. Agitation:
This process is defined as agglomeration by tumbling (growth). Particles are adhered together by use of balling drums, pans, cones and mixers via impact and tumbling. The resultant shape is a sphere. Agitation agglomeration can use the following equipment: mixers (planetary, cone, ribbon, pintype, drum, counter-

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current, vertical, paddle, pugmills), Disc pelletizers (pan granulators), drum pelletizers and cone pelletizers.

7. Pressure:

Pressure agglomeration utilizes methods such as extrusion presses, pelleting machines (pelletized), piston presses (tableting) and roller presses (briquetting, compacting). The pellets are formed by pressure imparted upon the materials. The resultant shape is a cylinder for products made with pelleting machines and extrusion presses. Pressure agglomeration can use the following equipment: roller presses (roll briquetters, roll compactors), piston/ram presses, pellet mills (ring die, flat die), extruders (auger, screw, screen, basket), tablet presses.

8. Liquid

With the liquid process, the liquid spray solidifies into a solid. Liquid agglomeration can use the following equipment: spray dryers, prill towers, spray/fluid bed, granulators, mixers for oil agglomeration.

9. Thermal

Thermal agglomeration requires the addition of an external heat source to result in particle bonding. Typical bonding include sintering, induration, calcining, and a form of flaking. This thermal flaking requires a device that spreads paste or melt as a thin film on the surface of a rotating drum: the film is then solidified by cooling water and scraped off the drum as flakes. Thermal agglomeration can use the following equipment: sinter strands, traveling grates, rotary kilns, shaft furnaces and drum/belt flakers.

10. The present invention relates to a method of making seed capsules in a single apparatus by a tumbling/agitation agglomeration operation comprising: preconditioning the seed with a binding agent while tumbling the seed. The seeds are conditioned by tumbling the seed in a bed of fine particulate to create layers of matter about the seed. The preconditioning and conditioning steps can be repeated to add additional layers to the seed.

11. The Kitamura process is defined as a liquid agglomeration process. The process of Kitamura is a coating process that coats a seed with a preconditioned coating material that requires a coating machine. Coating machines are a liquid agglomeration process,

not an agitation agglomeration process as claimed in the claims of the present invention. The machines and the processes are different. Sugar coating machines which are described by Kitamura are widely used in the pharmaceutical and food industries. They are also used for roasting and heating beans and edible nuts or seeds. Heat is applied to the pan as it rotates to cause a layering effect. Again, this is a coating technique, not an agitation technique. The fluidized bed in Kitamura is also being used for a coating technique and not as an agitation technique as described in the present invention.

12. Kitamura describes a liquid coating process and not an agglomeration operation comprising agitating and tumbling seeds with fine particulate in an apparatus for agglomeration which wraps layers of fine particulate around the seed.

13. The Examiner states that Kitamura is silent on a tumble/agitation agglomeration operation, but that Engelleitner teaches that the tumble/agitation agglomeration operation is an old and well-known means of adding mass. The Examiner states that it would have been obvious to apply the teachings of Engelleitner to the teachings of Kitamura since the modification is merely the application of a known technology as an alternative equivalent means of encapsulation selected to meet certain manufacturing parameters.

14. It would not be obvious to modify Kitamura with Engelleitner. Modifying a liquid agglomeration method with a tumble/agitation method is not an alternative equivalent means. As stated above different products are produced by using different agglomeration methods. Further the equipment used by liquid agglomeration and tumble/agitation are different.

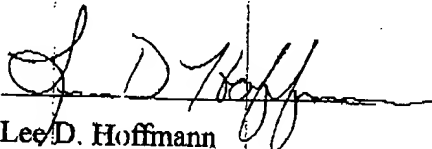
15. Kitamura teaches a process to produce coated seeds using a preconditioned coating material. Although the process of Kitamura results in ease of mechanical sowing and handling and long term storage, it does not improve germination/establishment performance.

16. The Examiner states that it would have been obvious to modify Kitamura with any of the machines listed in claims 4-13 since these are merely alternate equivalent agglomeration machines that perform the same intended function of agglomerating particles with a coating and one would select a particular agglomeration machine to satisfy different economic and time parameters and to accommodate different types of fertilizer or nutrient coatings.

17. The tumble/agitation agglomeration process/machine is a different and unique process from the liquid agglomeration process. As stated above different products are produced by using different agglomeration methods. Further the equipment used by liquid agglomeration and tumble/agitation are different. The selection of a particular agglomeration machine is based on the type of process and product one wishes to produce, not to satisfy different economic and time parameters or to accommodate different types of fertilizer or nutrient coatings.

18. I hereby declare that all of the statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the patent application to which it relates or any patent issued thereon.

Dated: SEPT. 24, 2002


Lee D. Hoffmann